

May 15, 1928.

1,669,784

T. J. SCOFIELD
AUTOMATIC CONTROL SWITCH

Filed Dec. 10, 1926

2 Sheets-Sheet 1

FIG. 1.

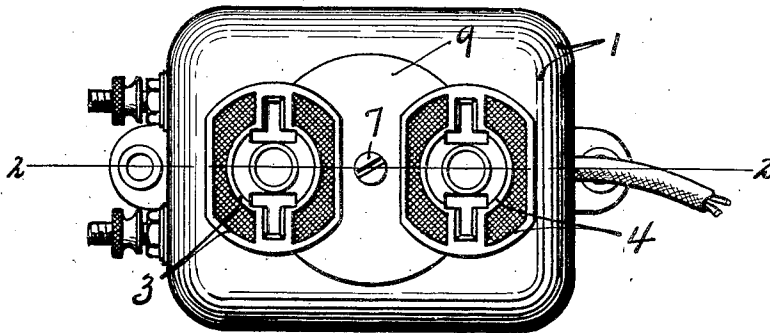


FIG. 2.

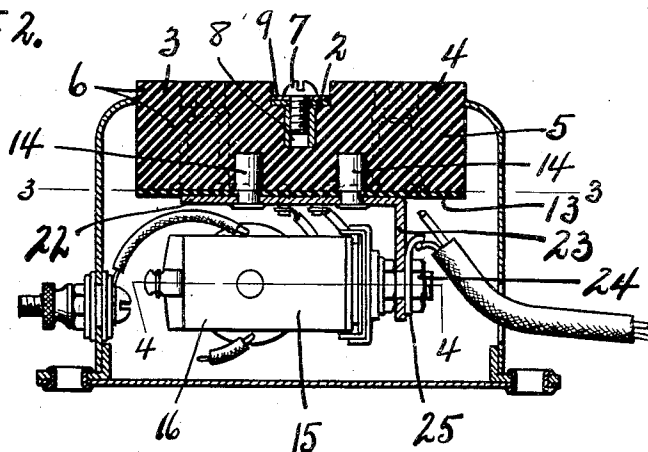
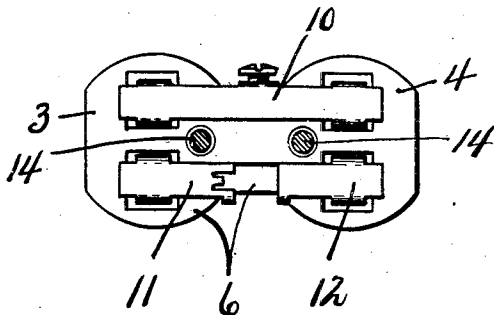


FIG. 3.



WITNESS
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FIG. 4.

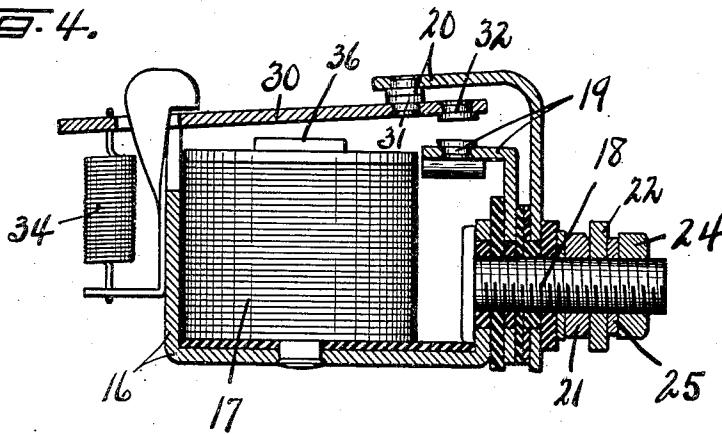
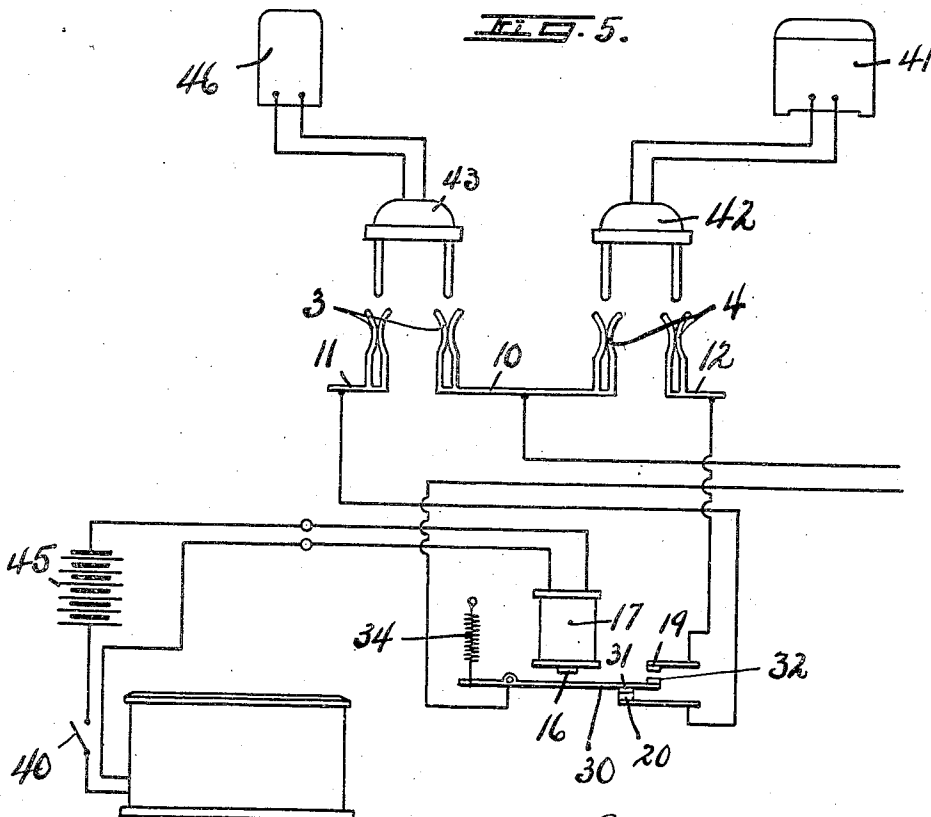


FIG. 5.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC CONTROL SWITCH.

Application filed December 10, 1926. Serial No. 153,868.

This invention relates to certain new and useful improvements in automatic control switches.

The main object of the invention is the production of an automatic control switch particularly for use in connection with radio-receiving apparatus which will automatically connect the circuits of said apparatus with a B-battery eliminator upon turning on of the regular switch usually positioned on the front panel of such apparatus, and when the said switch is turned off will automatically break the circuit leading to the B-battery eliminator and connect the A-battery of the receiving set with a source of charging current.

A further object resides in the fact that the entire apparatus is of simple and comparatively permanent construction, and includes a casing by which all the other portions of the apparatus are supported through the medium of a single attaching means.

A further feature resides in the fact that the two-plug receiving portions of the double outlet project through similarly shaped openings in the casing and the body of the outlet acts to insulate the relay portion of the apparatus from the casing.

A further advantage resides in the structural feature that the double outlet has three contact members, one of which contact members is common to the two circuits controlled respectively by the outlets.

A further advantage resides in the arrangement of and means for supporting the relay in connection with the double outlet.

Other objects and advantages relate to details of the structure and the parts thereof, all as will more fully appear from the following description, taken in connection with the accompanying drawings, in which:

Figure 1 is a top plan view of an automatic control switch of this invention.

Figure 2 is a section on line 2-2, Figure 1.

Figure 3 is a bottom plan view of the body of the double outlet with the insulating cover removed and showing the three separate contacts.

Figure 4 is a section on line 4-4, Figure 2.

Figure 5 is a diagrammatic illustration of appropriate circuits.

The apparatus as herein illustrated comprises a cup-shape casing —1—, in this instance of somewhat rectangular form, and provided in its upper side with a pair of spaced openings separated by an integral cross-bar —2—. These openings are adapted to and do receive two socket members —3— and —4— respectively spaced apart a distance substantially equal to the width of the cross-bar —2—, and extending upwardly from the body —5— of the double outlet —6— a distance sufficient so that when the socket members —3— and —4— are projected through the openings, they will be positioned a short distance above the upper side of the casing —1—.

The double outlet member —6— is preferably, as shown molded from insulating material and is secured in position with the socket members projected through the openings in the casing by means of a single screw —7— which extends through an opening in the cross-bar —2—, and is threaded into a bushing —8— molded into the body —5—.

A label member —9— as shown, may rest upon the upper surface of the cross-bar —2— and extend partially around the socket members —3— and —4—, and is secured in place by means of screw —7—. This label member is adapted to receive suitable trade-mark and other informative indicia.

The double outlet member —6—, is in general of ordinary construction, and as usual includes a contact —10— which is common to both sockets —3— and —4—, but in place of a second contact —10— common to both sockets, there is provided two contact members —11— and —12— spaced apart and insulated from each other, one of which, as —11—, provides a contact for the socket —3—, while the other, as —12—, provides a second contact for the socket —4—. These contacts may be recessed into the body —5— and covered by an insulating plate —13— secured to the body —5— in any suitable manner, as by rivets —14— molded into the body —5—.

These rivets —14— also constitute the means for supporting a relay mechanism —15— of any usual and ordinary construction. This relay mechanism is perhaps best illustrated in Figure 4, but may be of vari-

ous constructions. In this particular illustration, the frame —16— carrying the electro-magnet —17— is mounted upon a threaded bolt —18—, but is insulated from the bolt. The two contact members —19— and —20— are also mounted upon this bolt, but are insulated from each other and from the bolt, all of these parts being maintained in proper position, as by nut —21— threaded upon the bolt.

The supporting means for the relay mechanism comprises an angle bar —22— which is secured to the double outlet —6— by means of rivets —4— and the threaded bolt —18— extends through an opening in the downwardly projecting arm —23— of the angle bar —22—, and is secured in position by means of nut —24—, terminal member —25— being interposed between the arm —23— and nut —24—. Thus, the double outlet constitutes the sole means for supporting the relay —15— and the screw —7— constitutes the sole means for connecting the entire apparatus to the casing —1—, whereby easy removal for repair, change or inspection is permitted.

The relay, as stated, may be of the usual form, but includes the movable bar —30— carrying contacts —31— and —32— adapted to contact respectively with the contacts upon the arms —19— and —20—. Spring —34— normally maintains the contact —31— in electrical connection with the contact on arm —20—, but electro-magnet —17— when energized, will draw the bar —30— toward the core —36— to bring contact —32— into electrical connection with the contact on the bar —19—.

The mechanical construction and arrangement of the apparatus constitutes the invention here claimed, and for that reason no special description of the electric circuits is necessary, but it will be apparent from Figure 2 that when switch —40—, usually positioned on the front panel of the radio-receiving apparatus is closed, the relay —15— will be operated, and through energizing of magnet —17—, contact —32— will be brought into electrical connection with the contact on arm —19— to close the circuit through the B-eliminator indicated at —31— if plug —42— is engaged with its socket —4—.

When switch —40— is opened, plug —43— being properly engaged with socket —3—, the battery —45— will be brought into communication with a source of charging current —46—.

The advantages and features of this invention reside in the mechanical structure of the device, and altho I have shown and described a specific form and construction of device, together with the particular relation and association of the parts, I do not

desire to restrict myself to the details of the same, as various changes and modifications may be made within the scope of the appended claims.

I claim:

1. An automatic control switch comprising a casing having a pair of spaced openings in one side thereof, a unitary double outlet structure having a pair of spaced socket portions positioned in respective openings in the casing, said outlet structure having a contact common to both socket portions and two additional separate contacts, one for each socket portion and means within the casing for automatically closing either one of two circuits, one of said circuits including the common contact member and one of the separate contacts and the other circuit including the common contact member and the other of said separate contacts.

2. An automatic control switch comprising a casing having a pair of spaced openings in one side thereof, a unitary double outlet structure having a pair of spaced socket portions positioned in respective openings in the casing, said outlet structure having a contact common to both socket portions and two additional separate contacts, one for each socket portion and a relay structure within the casing for automatically closing either one of two circuits, one of said circuits including the common contact member and one of the separate contacts and the other circuit including the common contact member and the other of said separate contacts.

3. An automatic control switch comprising a casing having a pair of spaced openings in one side thereof, a unitary double outlet structure having a pair of spaced socket portions positioned in respective openings in the casing, said outlet structure having a contact common to both socket portions and two additional separate contacts, one for each socket portion and a relay structure within the casing for automatically closing either one of two circuits, one of said circuits including the common contact member and one of the separate contacts and the other circuit including the common contact member and the other of said separate contacts, and means for securing the relay structure to the outlet structure whereby the former is supported to thereby permit unitary removal of the outlet structure and relay structure from the casing.

4. An automatic control switch comprising a casing having a pair of spaced openings in one side thereof, a unitary double outlet structure having a pair of spaced socket portions positioned in respective openings in the casing, a single screw constituting the sole means for securing the outlet structure to the casing, said outlet structure hav-

ing a contact common to both socket portions and two additional separate contacts, one for each socket portion and a relay structure within the casing for automatically closing either one of two circuits, one of said circuits including the common contact member and one of the separate contacts and the other circuit including the common contact member and the other of said separate contacts, and means for securing the relay structure to the outlet structure whereby the former is supported to thereby permit unitary removal of the outlet structure and relay structure from the casing.

15 5. An automatic control switch comprising a casing having a pair of spaced openings in one side thereof, a unitary double outlet structure having a pair of spaced socket portions available through respective openings
20 for operative engagement, said outlet structure having a contact common to both socket portions and two additional separate contacts, one for each socket portion, and a relay structure within the casing for automatically closing either one of two circuits,
25 one of said circuits including the common contact member and one of the separate contacts, and the other circuit including the

common contact member and the other of said separate contacts.

30 6. An automatic control switch comprising a casing having a pair of spaced openings in one side thereof, a unitary double outlet structure having a pair of spaced socket portions available through respective open-
35 ings for operative engagement, said outlet structure having a contact common to both socket portions and two additional separate contacts, one for each socket portion, a relay structure within the casing for automatically
40 closing either one of two circuits, one of said circuits including the common contact member and one of the separate contacts, and the other circuit including the common
45 contact member and the other of said separate contacts, and means for supporting the relay structure from the outlet structure comprising an angle bar having one leg connected to the outlet structure and its other
50 leg having a single point connection with the relay structure to permit unitary removal of the outlet structure and relay structure from the casing.

In witness whereof I have hereunto set my hand this 6th day of December, 1926.

THEODORE JOHNSON SCOFIELD.